A new species of *Holothrix* Lindl. (Orchidaceae) from northern KwaZulu-Natal

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Holothrix majubensis C. Archer & R.H. Archer, a new species from southern Africa, is described, illustrated and compared with the other related members of the genus. It is a very distinctive species, with a unique combination of glabrous leaves with hairy margins, woolly scapes and non-resupinate, carnose, white flowers with a constantly 3-lobed lip.

Keywords: *Holothrix*, KwaZulu-Natal, Orchidaceae, southern Africa, taxonomy.

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Introduction

Early in January 1994, while preparing a checklist of the orchid flora of Majuba Mountain, Mr Hendro van der Walt of Newcastle and his father, Hennie (an honorary warden of the Natal Parks Board), came across a small terrestrial orchid. Being unable to identify the species from available literature, they suspected that it was novel. They brought a plant to Mr Christo Page of the Northern Transvaal Orchid Society in Pretoria; he forwarded it to the senior author at the National Botanical Institute, who found that it was indeed a new species. In January 1995 the authors had the opportunity to visit the area and study the population in the field. We now have great pleasure in complying with the request of the van der Walts that this new species be named after their beloved mountain. A note relating the discovery of this orchid, with photographs, was published in the *South African Orchid Journal* (van der Walt & van der Walt 1995).

Holothrix majubensis *C. Archer & R.H. Archer* sp. nov., a speciebus omnibus aliis generis bene distincta foliis glabris marginibus hirsutis, scapis hirsutis, floribus nonresupinatis carnosis albis, labello semper trilobo.

TYPUS.— KwaZulu-Natal, Newcastle district, Majuba Mt., sandstone cliffs on northern slopes near the summit, *c.* 2 225 m (2729 BD), 7 Jan. 1995, *C. Archer & R.H. Archer 2063* (PRE, holotypus; BOL, NH, isotypi).

Plant slender, up to 55 mm tall. *Leaves* 2, green at flowering, ovate, up to 35 × 25 mm, fairly thick-textured, thinly woolly on margin only. *Scape* ebracteate, indumentum of dense to thin white, woolly hairs. *Inflorescence* dense, secund, flowers non-resupinate, up to 15, petals and lip carnose, white. *Bracts* ovate, apex acute, *c.* 2.5 mm long, densely hairy. *Sepals* broadly ovate, *c.* 2.0 × 1.2 mm, sparsely hairy. *Petals* undivided, 1-veined, lanceolate with obtuse apex, *c.* 2.8 × 1.0 mm; lip with undivided portion 1.5 × 2.0 mm; lobes 3, ± equal, 1-veined, 1.0 × 0.6 mm, apices obtuse. *Gynostemium* erect, 1.0 mm long. *Spur* conical, slightly recurved, 1 mm long. *Ovary* elliptical, constricted at apex, 2.5 mm long. *Capsule* elliptical, sparsely hairy, 4.0 × 2.0 mm. (Figure 1.)

Flowering December and January.

Discussion

In the genus, the non-resupinate flowers of *Holothrix majubensis*

Table 1 Comparison of salient characters of *Holothrix majubensis* and other related species with 3 lip lobes

	H. majubensis	*H. villosa* Lindl. (two varieties)	*H. exilis* Sond.	*H. thodei* Rolfe
Known distribution	KwaZulu-Natal	Northern Province, Gauteng, Northern Cape, Western Cape, Eastern Cape	Western Cape, Eastern Cape	Free State, KwaZulu-Natal, Lesotho, Eastern Cape
Leaves	alive at anthesis	alive at anthesis	alive or dead at anthesis	dead at anthesis
Abaxial surface	glabrous; woolly on margin	hairy	hairy	hairy
Scape indumentum	woolly	straight	straight	reflexed
Flowers	non-resupinate	resupinate	resupinate	resupinate
Colour	white	cream to yellow-green	creamy green	yellow-green
Lip lobes	3, equal	3, equal	1–3, equal or unequal	3, unequal

are the main distinguishing character. It is postulated that the non-resupination is an adaptation to the pollinator: due to the inflorescences arching outwards and downwards, the flowers are placed in the correct position for pollination. Non-resupinate flowers are also known in the unrelated genus *Habenaria* Willd. (Summerhayes 1968), however, the function here is unknown.

Holothrix majubensis falls into the group of taxa without bracts on the scape, with undivided petals, and small flowers with carnose petals and lip and three (or sometimes fewer) lip lobes. The differences between this species and its assumed closest relatives are summarized in Table 1. Information about the other species is adapted from Immelman (1979, in press) and Stewart *et al.* (1982).

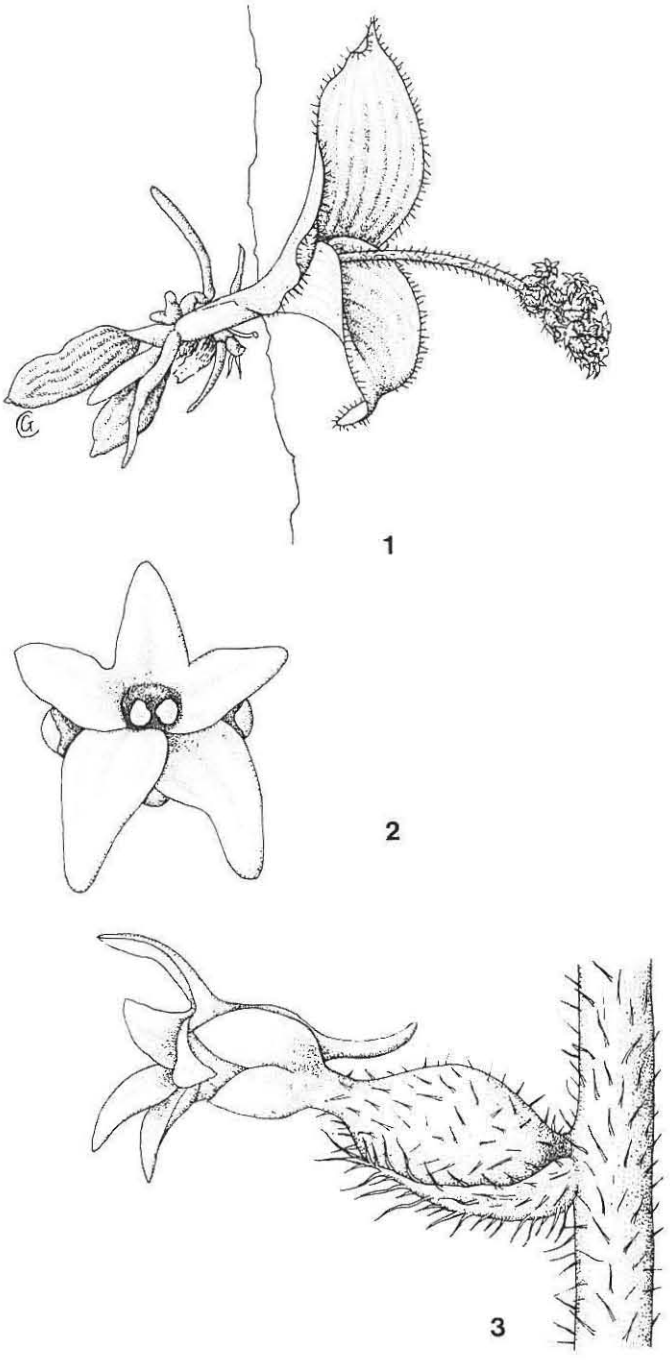

Figure 1 *Holothrix majubensis*. 1. Flowering plant, × 1. 2. Flower, front view, × 10. 3. Flower, side view, × 10. Fewer hairs are drawn and should be more curly. Illustration by Gillian Condy.

Other species which sometimes have three lip lobes are the white-flowered *H. mundii* Sond. and the green-flowered *H. cernua* (Burm. f.) Schelpe. However, these two are easily distinguished by the small, condensed inflorescence of the former and the coarse, reflexed scape hairs of the latter.

H. majubensis is also easily distinguished from several other species of the genus that are known to occur on the nearby Drakensberg Mountains of KwaZulu-Natal and Lesotho, and the Heidelberg and Witwatersrand Mountains of Gauteng (Immelman 1979). The species with unlobed petals that occur in the above-mentioned areas include *H. villosa* Lindl. and *H. thodei* Rolfe with 3-lobed lips (Table 1) as well as *H. incurva* Lindl. and *H. micrantha* Schltr. Both the latter two species have 5-lobed lips, and *H. incurva* has glabrous or slightly hairy leaves and yellowish-green flowers while *H. micrantha* has hairy leaves which are dead at anthesis. The flowers of *H. micrantha* have a brownish tinge (vide Schlechter 1895: 31).

H. majubensis is also quite different from the species known to occur in tropical Africa. As far as can be established, the only species with ebracteate scapes, entire petals and a 3-lobed lip is *H. arachnoidea* (A. Rich.) Reichb. f. from East Africa and Arabia (Summerhayes 1968; Cribb 1979), but it has hairy leaves, the lip is lobed only in the upper half and the flowers are green ± flushed with violet or purple (Cribb 1979).

To date the new species is known from only one locality, where it is fairly plentiful (Figure 2). We expect that it will be found on similar northern faces of neighbouring mountains in northern KwaZulu-Natal and southern Mpumalanga. Botanical exploration of these areas is currently being undertaken by, amongst others, staff of the Natal Parks Board. Majuba Mountain itself was briefly visited in passing by such collectors as Reh-

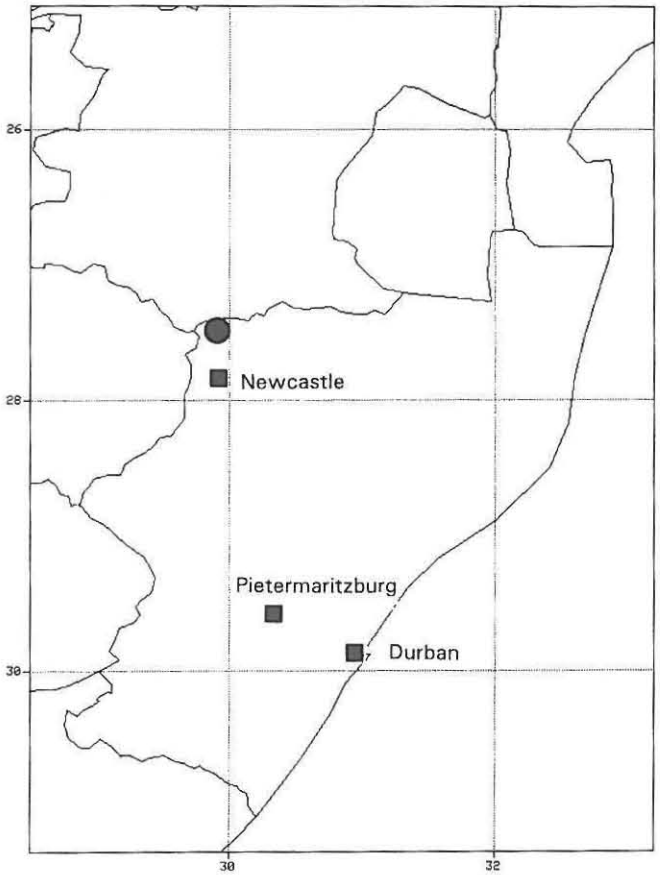

Figure 2 The known geographical distribution of H. *majubensis*.

mann (*c.* 1875–1880) and Archdeacon Rogers (March 1905) (information from PRECIS, N.B.I., Pretoria), but because the plants of *H. majubensis* are inconspicuous, with a brief flowering period (December to January), the species has escaped attention until now. Unfortunately the habitat is rather vulnerable to erosion since the plants grow in exposed soil in cracks in vertical sandstone cliffs. The two leaves are adpressed to the soil and the stems arch outwards, with the apex pointing downwards; in the non-resupinate flowers the spur and lip are thus held on the lower side as in the other species of *Holothrix*. [Note that the photographs in van der Walt & van der Walt (1995) are from a cultivated plant showing the plant in an upright position.] *H. majubensis* may only be able to survive in this habitat due to lack of competition from other vegetation; generally the only other species which occurs in this microhabitat, and which sometimes provides shade for the orchids, is the large-leaved geophyte *Scilla natalensis* Planch.

This new species of *Holothrix* brings the total number of known taxa in the genus in southern Africa to 23 species and one variety. The genus also occurs in tropical East Africa, with 14 species recorded; two species, *H. aphylla* (Forssk.) Reichb. f. and *H. arachnoidea*, extend to Yemen, Arabia (Summerhayes 1968; Cribb 1979). Although the genus has previously been recorded from Madagascar, Socotra and other Indian Ocean Islands, the species in question have apparently all been transferred to other genera. In South Africa the genus is widely distributed in semi-arid regions of the country, generally growing in well-drained gravel derived from quartzite or sandstone (like in *H. majubensis*) or from basalt.

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